



An HTTP Rest API as SRM replacement for tape access - Live DEMO backup slides

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Archiving of a file



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ xrdcp ./FileXRootD.txt root://localhost//eos/ccaffy/tape/  
[21B/21B][100%][=====][21B/s]  
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ curl --head -k -L --capath /etc/grid-security/certificates/  
--cert ~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem https://eos-  
ccaffy-dev01.cern.ch:9000/eos/ccaffy/tape/ --upload-file ./FileHttpRestApi.txt  
[...]  
HTTP/1.1 201 Created  
Connection: Keep-Alive  
Content-Length: 0  
Date: Tue, 08 Mar 2022 08:21:21 GMT  
  
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```

Archival tracking - file on disk



XRootD

```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ xrdafs root://localhost// query prepare fake_id /eos/ccaffy/tape/FileXRootD.txt | jq
{
  "request_id": "fake_id",
  "responses": [
    {
      "error_text": "",
      "has_reqid": false,
      "on_tape": false,
      "online": true,
      "path": "/eos/ccaffy/tape/FileXRootD.txt",
      "path_exists": true,
      "req_time": "",
      "requested": false
    }
  ]
}
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat ./archival_tracking_http.sh
json='
{
  "paths":[
    "/eos/ccaffy/tape/FileHttpRestApi.txt"
  ]
}
'

echo $json | curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem https://eos-ccaffy-dev01.cern.ch:9000/api/v1/archiveinfo -X POST -H "Content-Type: application/json" -d @- 2> /dev/null | jq

eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./archival_tracking_http.sh
[
  {
    "locality": "DISK",
    "path": "/eos/ccaffy/tape/FileHttpRestApi.txt"
  }
]
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```

Archival tracking - file on tape



XRootD



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ xrdafs root://localhost// query prepare fake_id /eos/ccaffy/tape/FileXRootD.txt | jq
{
  "request_id": "fake_id",
  "responses": [
    {
      "error_text": "",
      "has_reqid": false,
      "on_tape": true,
      "online": false,
      "path": "/eos/ccaffy/tape/FileXRootD.txt",
      "path_exists": true,
      "req_time": "",
      "requested": false
    }
  ]
}
```

```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat ./archival_tracking_http.sh
json='
{
  "paths":[
    "/eos/ccaffy/tape/FileHttpRestApi.txt"
  ]
}
'

echo $json | curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem https://eos-ccaffy-dev01.cern.ch:9000/api/v1/archiveinfo -X POST -H "Content-Type: application/json" -d @- 2> /dev/null | jq
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./archival_tracking_http.sh
[
  {
    "locality": "TAPE",
    "path": "/eos/ccaffy/tape/FileHttpRestApi.txt"
  }
]
```

Recall the file from the tape - Submission



XRootD



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ xrdfs root://localhost// prepare -s /eos/ccaffy/tape/FileXRootD.txt
0446bcb97f32:17fb95cd.6226001c:5:1646729140
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```

```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat stage_submission_http.sh
json='
{
  "files":[
    {
      "path":"/eos/ccaffy/tape/FileHttpRestApi.txt"
    }
  ]
}
'

echo $json | sudo curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem
--cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X POST https://eos-ccaffy-dev01.cern.ch:9000
/api/v1/stage -d @- 2> /dev/null | jq
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./stage_submission_http.sh
{
  "requestId": "65561554-9ebc-11ec-ac07-fa163e0f6dc7"
}
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```

Recall the file from the tape - Cancellation



```
eosdev@eos-ccaffy-dev01 ~ $ xrdafs localhost prepare -a 0446bcb97f32:17fb95cd.6226001c:5:1646729140
/eos/ccaffy/tape/FileXRootD.txt
eosdev@eos-ccaffy-dev01 ~ $
```

```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat ./stage_cancellation_http.sh
json='
{
  "paths":[
    "/eos/ccaffy/tape/FileHttpRestApi.txt"
  ]
}
'

echo $json | sudo curl -L --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem --cacert
~/.globus/usercert.pem --key ~/.globus/userkey.pem -H 'Content-Type: application/json' -X POST
https://eos-ccaffy-dev01.cern.ch:9000/api/v1/stage/$1/cancel --data @-
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./stage_cancellation_http.sh 65561554-9ebc-11ec-ac07-
fa163e0f6dc7
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```


Recall the file from the tape - Tracking



```
eosdev@eos-ccaffy-dev01 ~ $ xrd fs root://localhost// prepare -s /eos/ccaffy/tape/FileXRootD.txt
0446bcb97f32:17fb95cd.6226001c:6:1646738443
eosdev@eos-ccaffy-dev01 ~ $
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat stage_submission_http.sh
json='
{
  "files":[
    {
      "path":"/eos/ccaffy/tape/FileHttpRestApi.txt"
    }
  ]
}
'

echo $json | sudo curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem
--cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X POST https://eos-ccaffy-dev01.cern.ch:9000
/api/v1/stage -d @- 2> /dev/null | jq
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./stage_submission_http.sh
{
  "requestId": "e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7"
}
```



Recall the file from the tape - Tracking: file is on tape



```
eosdev@eos-ccaffy-dev01 ~ $ xrd fs root://localhost// prepare -s /eos/ccaffy/tape/FileXRootD.txt
0446bcb97f32:17fb95cd.6226001c:6:1646738443
eosdev@eos-ccaffy-dev01 ~ $
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat stage_submission_http.sh
json='
{
  "files":[
    {
      "path":"/eos/ccaffy/tape/FileHttpRestApi.txt"
    }
  ]
}
'

echo $json | sudo curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem
--cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X POST https://eos-ccaffy-dev01.cern.ch:9000
/api/v1/stage -d @- 2> /dev/null | jq
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./stage_submission_http.sh
{
  "requestId": "e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7"
}
```


Recall the file from the tape - Tracking: file is on disk



```
eosdev@eos-ccaffy-dev01 ~ $ xrdafs root://localhost// query prepare
0446bcb97f32:17fb95cd.6226001c:5:1646729140 /eos/ccaffy/tape/FileXRootD.txt | jq
{
  "request_id": "0446bcb97f32:17fb95cd.6226001c:5:1646729140",
  "responses": [
    {
      "error_text": "",
      "has_reqid": false,
      "on_tape": true,
      "online": true,
      "path": "/eos/ccaffy/tape/FileXRootD.txt",
      "path_exists": true,
      "req_time": "",
      "requested": false
    }
  ]
}
```

```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ sudo curl -L -v --capath /etc/grid-security/certificates --cert
~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X GET https://eos-
ccaffy-dev01.cern.ch:9000/api/v1/stage/e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7 2> /dev/null | jq
{
  "createdAt": 1646738488,
  "files": [
    {
      "onDisk": true,
      "path": "/eos/ccaffy/tape/FileHttpRestApi.txt"
    }
  ],
  "startedAt": 1646738488
}
```

Recall the file from the tape - Copy the recalled file elsewhere



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ xrdcp root://localhost//eos/ccaffy/tape/FileXRootD.txt
./FileXRootD_recalled.txt
[21B/21B][100%][=====][21B/s]
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat FileXRootD_recalled.txt
XR00TD UPLOADED FILE
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ sudo curl -L -v --capath /etc/grid-security/certificates --cert
~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem https://eos-ccaffy-
dev01.cern.ch:9000//eos/ccaffy/tape/FileHttpRestApi.txt 2>/dev/null 1> FileHttpRestApi_recalled.txt
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat FileHttpRestApi_recalled.txt
FILE UPLOADED VIA HTTP
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $
```

Release recalled file from EOS+CTA buffer



```
eosdev@eos-ccaffy-dev01 ~ $ xrd fs root://localhost// prepare -e /eos/ccaffy/tape/FileXRRootD.txt
eosdev@eos-ccaffy-dev01 ~ $ xrd fs root://localhost// query prepare
0446bcb97f32:17fb95cd.6226001c:5:1646729140 /eos/ccaffy/tape/FileXRRootD.txt | jq
{
  "request_id": "0446bcb97f32:17fb95cd.6226001c:5:1646729140",
  "responses": [
    {
      "error_text": "",
      "has_reqid": false,
      "on_tape": true,
      "online": false,
      "path": "/eos/ccaffy/tape/FileXRRootD.txt",
      "path_exists": true,
      "req_time": "",
      "requested": false
    }
  ]
}
```



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ cat release_file_http.sh
json='
{
  "paths":[
    "/eos/ccaffy/tape/FileHttpRestApi.txt"
  ]
}
'

echo $json | sudo curl -L -v --capath /etc/grid-security/certificates --cert ~/.globus/usercert.pem
--cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X POST https://eos-ccaffy-
dev01.cern.ch:9000/api/v1/release/fake_id -d @- 2>/dev/null
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ ./release_file_http.sh
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ sudo curl -L -v --capath /etc/grid-security/certificates --cert
~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X GET https://eos-
ccaffy-dev01.cern.ch:9000/api/v1/stage/e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7 2> /dev/null | jq
{
  "createdAt": 1646738488,
  "files": [
    {
      "onDisk": false,
      "path": "/eos/ccaffy/tape/FileHttpRestApi.txt"
    }
  ],
  "startedAt": 1646738488
}
```

Delete the stage request from the REST API persistency



```
eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ sudo curl -L -v --capath /etc/grid-security/certificates --cert
 ~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X DELETE https://eos-
 ccaffy-dev01.cern.ch:9000/api/v1/stage/e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7 2> /dev/null

eosdev@eos-ccaffy-dev01 ~/EOS_Workshop $ sudo curl -L -v --capath /etc/grid-security/certificates --cert
 ~/.globus/usercert.pem --cacert ~/.globus/usercert.pem --key ~/.globus/userkey.pem -X GET https://eos-
 ccaffy-dev01.cern.ch:9000/api/v1/stage/e5af422e-9ed1-11ec-8b9d-fa163e0f6dc7 2> /dev/null | jq
{
  "detail": "",
  "status": 404,
  "title": "Not found",
  "type": "about:blank"
}
```



home.cern